

# PATENT SPECIFICATION

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## (54) A URETHRAL INTRODUCTION CATHETER

(71) I, JERRY GLEN POWERS, of 1621 Post Drive, Omaha, Nebraska 68114, United States of America, a citizen of the United States of America, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to a urethral introduction catheter wherein lubricant is moved through the urethra ahead of the catheter. Conventional catheters can produce urethral trauma and frequently 15 subject the patient to pain and discomfort. Additionally, the conventional catheters are difficult to maintain in a sterile condition thereby resulting in patient infections. Further, the conventional catheters are difficult to use and require considerable time 20 to use.

It is an object of the present invention to provide a urethral introduction catheter.

Further desired objects of the invention 25 are to provide a urethral introduction catheter wherein lubricant is moved through the urethra prior to the catheter tube, to provide means for maintaining the sterile condition of the catheter and to 30 eliminate the need for a catheter tray, sterile gloves or a sterile shield.

It is also desired to provide a urethral introduction catheter which reduces urethra trauma as well as reducing the possibility 35 of the introduction of foreign pathogens into the bladder. It is also desired to provide a urethral introduction catheter which is simple to use, saves time and is economical of manufacture.

40 According to the present invention there is provided a urethral introduction catheter having distal and proximal ends, said catheter having a connector at its proximal end, said catheter having an introducer at 45 its distal end, said introducer having an

introducer end portion extending outwardly therefrom, for insertion into a patient's urethra, said introducer having a bore extending therethrough which communicates 50 with said introducer end portion, a catheter tube connected to and extending between said connector and said introducer, said catheter tube having its proximal end fixedly secured to said connector and having 55 its distal end selectively slidably mounted in said introducer bore so that said distal end of said catheter tube may be extended outwardly through said introducer end portion, a flexible sheath secured at its 60 proximal end to said connector and secured at its distal end to said introducer, a sterile lubricant in said introducer bore for lubricating said catheter tube, and a first cap removably mounted on said introducer end portion. 65

The present invention will be further illustrated, by way of example, with reference to the accompanying drawings, in which:—

Fig. 1 is a perspective view of the urethral introduction catheter of this invention: 70

Fig. 2 is a sectional view of the catheter seen along lines 2-2 of Fig. 1:

Fig. 3 is a sectional view seen on lines 2-2 of Fig. 2; and 75

Fig. 4 is a side elevational view of the catheter illustrating the catheter tube having been extended through the introducer.

The numeral 10 refers generally to the catheter device having a proximal end 12 80 and a distal end 14. A connector 16 is provided at the proximal end of the device and has one end of the catheter tube 18 secured thereto and extending outwardly therefrom. The numeral 20 refers to a cap 85 which is removably mounted on the proximal end 22 of the catheter tube 18.

The other end of the catheter tube 18 is slidably mounted in a bore 24 of a tube 26 which is secured to the introducer 28. 90

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Catheter tube 18 is provided with suitable openings 29 at its distal end. Tube 26 extends outwardly from the distal end of the introducer 28 to define an introducer end portion 30. The numeral 32 refers to a cap which is removably mounted on the introducer end portion 30 as seen in the drawings. If desired, the tube 26 in introducer 28 may be omitted so that the entire interior of introducer 28 may be filled with lubricant. In such case, the introducer end portion would be formed by the outer end of the introducer 28 on which the cap would be placed. Introducer 28 may also be made somewhat flexible so that the introducer 28 may be squeezed to force the lubricant into the urethra. In other words, the technician would manually compress or squeeze the flexible introducer to force or expel the lubricant outwardly therefrom.

A flexible sheath 34 is secured at its proximal end to the connection 16 by heat sealing or the like and is secured at its distal end to the introducer 28 by heat sealing or the like. As seen in the drawings, when the sheath 34 is in its extended condition, the distal end of the catheter tube 18 extends into the proximal end of the introducer 28. The numeral 36 refers to approximately .5 cc water-soluble lubricant which is positioned in the bore 24 ahead of the distal end of the catheter tube 18.

Preferably, the catheter tube 18 is constructed of a polyvinyl chloride or rubber material while the connector 16 is comprised of a polypropylene material. The sheath 34 is preferably constructed of a polyethylene material while the introducer is preferably constructed of a propylene material.

The method of using the catheter is as follows. The catheter device would be previously sterilized and would be enclosed in a sterile paper package or the like. The device 10 is removed from the package and the patient is prepared for the procedure. The urethral meatus is cleaned and the protective cap 32 is removed from the introducer end portion 30. The introducer end portion 30 is then inserted approximately 3/8 inch into the urethra. The nurse then holds the introducer 28 and the genitalia and grasps the catheter tube 18 through the polyethylene sheath 34. The catheter tube 18 is then gently slidably moved outwardly from the introducer 28 into the urethra. When the catheter tube has been inserted to a depth of approximately 9 inches (male) or approximately 1-1/2 inches (female) the drain cap 20 is removed from the spout portion

22 and the specimen is collected. It can be seen that the water-soluble lubricant is pushed into the urethra by the catheter tube 18 so as to lubricate the urethra to assist the insertion of the catheter.

The water-soluble lubricant substantially reduces urethral trauma and greatly decreases the pain experienced by the patient. Further, the catheter of this invention is maintained in a sterile condition and substantially reduces patient infections. The catheter tube may be slidably extended into the urethra without the nurse coming into direct contact with the catheter which eliminates the need for sterile gloves or a catheterization tray.

#### WHAT I CLAIM IS:—

1. A urethral introduction catheter having distal and proximal ends, said catheter having a connector at its proximal end, said catheter having an introducer at its distal end, said introducer having an introducer end portion extending outwardly therefrom, for insertion into a patient's urethra, said introducer having a bore extending therethrough which communicates with said introducer end portion, a catheter tube connected to and extending between said connector and said introducer, said catheter tube having its proximal end fixedly secured to said connector and having its distal end selectively slidably mounted in said introducer bore so that said distal end of said catheter tube may be extended outwardly through said introducer end portion, a flexible sheath secured at its proximal end to said connector and secured at its distal end to said introducer, a sterile lubricant in said introducer bore for lubricating said catheter tube, and a first cap removably mounted on said introducer end portion.

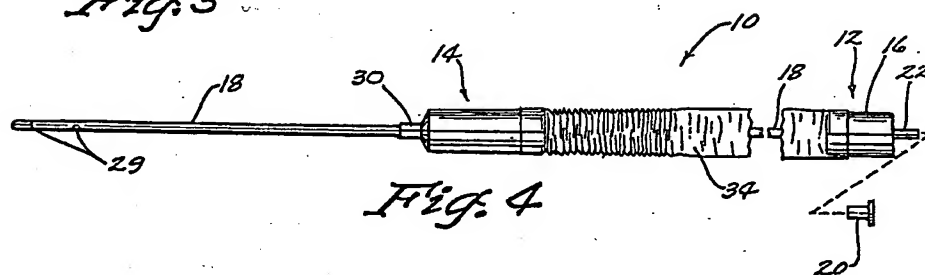
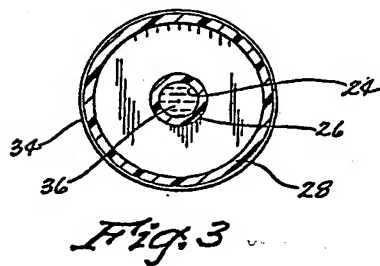
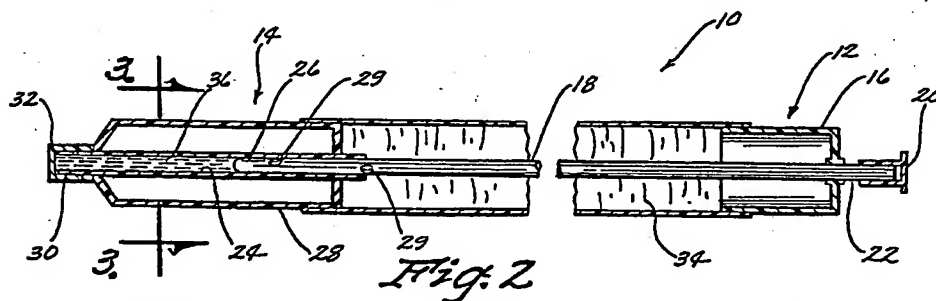
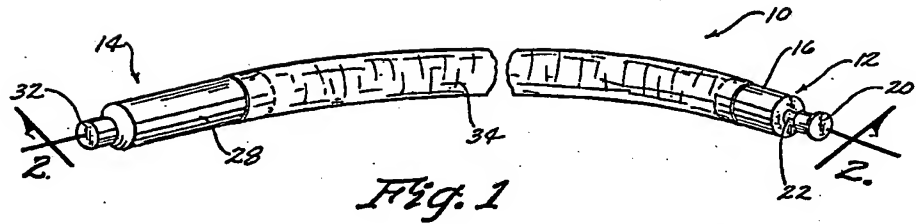
2. A catheter as claimed in claim 1, wherein a second cap is removably mounted on said proximal end of the catheter tube.

3. A catheter as claimed in claim 1 or 2, wherein said lubricant comprises a water soluble lubricant.

4. A urethral introduction catheter, substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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